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REGION

7



7-2 - Santa Paula, California.
EROSION - Gully.

Erosion on Lima Bean land Rincon loam, during storm of Dec. 31, 1933,
Water followed subsoil marked slopes 5 to 10%. Feb. 8, 1934.



⁷
Cal-107. Ventura county. Sheet erosion in apricot orchards planted on
sloped land up to 55%. Patches of weeds show tendency to control erosion.

(Colored)
Slide D-4



7-108 - Santa Paula, California
EROSION - Sheet

Sheet erosion in apricot orchard planted on slopes up to 55%.
Patches of weeds show tendency to control the erosion.



7-586 - Santa Paula, California.
EROSION CONTROL - Terracing.

In a few instances, provision is made against erosion in the Fallbrook Area as indicated in the picture above. 1934.

(Colored)
Slide A-85a



7-830 - Santa Paula, California
EROSION CONTROL - Terrace

Young orange trees on terrace.



7-951 - Santa Paula, California
EROSION - Gully

A damsite before construction of wire and pipe dam. Banks have
been sloped preparatory to planting. 1934



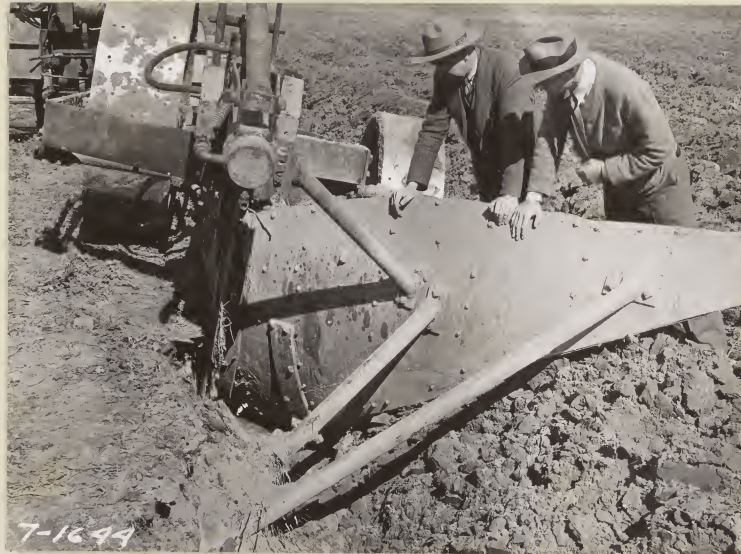
7-1221 - Santa Paula, California
EROSION - Gully - After

A later picture of 7-951. Note cagelike construction of pipe and wire mesh dam. Later a rock apron will be placed in front to prevent under cutting. 1934



7-1643 Ventura Co., Cal.

On the right side. The many-spoked wheel at the front travels in the bottom of the four-foot furrow while the other wheel seen travels along the top of the undisturbed ground. This plow is pulled by three 60 h.p. Caterpillar tractors.



7-1644 Ventura Co., Cal.
A front view of mammoth plow. The forward
plow which pushes sand deposition into bottom
of furrow is clearly shown here, also the
relative positions of the two blades.



⁷
Cal-1645

View of the plow and the wide deep furrow it makes.



7-1980 - Santa Paula, California
EROSION - Hillside

Fresh erosion lines on hillside. McCormick Barranca. Half
mile above house.



Cal. 4886 -- December 5, 1938 -- Shasta County, $\frac{1}{8}$ mi. S.E. of Kennett, California

Very severe sheet and gully erosion caused by complete denudation of vegetation from effects of old copper smelter. Located immediately upstream from Shasta Dam now being constructed.
Purpose of Photo: Flood Control Report.

PHOTO BY: H. M. Gabbert

Slide 320^c



7-1984 - Santa Paula, California
EROSION - Sheet

Dendritic drainage lines from recent rains.



7-2346 - Santa Paula, California.
EROSION - Gully.

A gully north of the Ventura County Hospital.



7-2369 - Santa Paula, California
EROSION CONTROL - Terraces

A terraced contour orchard.



7-1696

Showing hill after storm.

California



7-2336 - Santa Paula, California.
EROSION CONTROL - Gully Control.

A head control outfall #37 and large rock dam with a concrete facing #13, and surrounding planting.



7-2400 - Santa Paula, California
EROSION CONTROL - Contour ditches

Contour ditches and diversion ditches - contour ditch bank in the foreground.



7-2419 - California
EROSION CONTROL - Contour

Contour ditches and orchard planting from top of Enos hill.



7-2420 - California
EROSION CONTROL - Contour

Contour ditches and contour orchard planting from top of Enos hill.



Cal-2818. California.

EROSION CONTROL.

Completed Concrete debris basin at Montrose.



16844 - California.
EROSION - Gully.

Erosion in Lompoc Valley Section, south of Santa Maria, Calif.
This sandy clay formation is riddled with squirrel holes, which
no doubt have contributed to the washing. The highway at head
of gully is about to be undermined. H. H. Bennett - 1930.



16846 - California.
EROSION - Gully.

Recent gully southeast of Santa Barbara nearly 60 feet deep
in places. South slope of ridge south of Santa Paga Valley.
H. H. Bennett - 1930.



16847 - California.
EROSION - Gully.

Erosion in Lampoc Valley, south of Santa Marie. Tough sandy clay substratum exposed in pinnacle pattern (like coastal plain substratum exposed by removal of loessial layers above in lower Mississippi Valley - Grenada substratum) by washing off of brown p.s.l. upper layers. Abundance of ground squirrel holes.
H. H. Bennett - 1930.



CAL-2821. Ventura County, California; December 10, 1935.

General view of lathhouse, Soil Conservation Service Nursery, Santa Paula, California in which half a million plants were grown in containers in flats.



Cal-2835. California.
EROSION CONTROL - Ditches.

Newly completed contour ditches with recently planted winter peas in foreground. Through the cooperation of the owner these ditches were constructed while the actual planting was being done with only the loss of a small strip of ground showing above the first contour ditch due to activity of WPA workers used on the project. Note the gullied hillside in the background which is not available at present for SCS control measures since the property is in litigation.

Cal-2925

1-24-36

Part of a series of forty check dams in Pineo ditch. During the last rain all functioned perfectly with the exception of one which had been constructed at too low an elevation. See also No. Cal-2935. History: Original winding gully made a patch through this area of approximately 25 feet in width.



Cal-2928 El Dorado County 1-21-36
 Deep cutting in orchard caused by water follow-
 ing plowed furrows during the long period of
 continuous irrigation in the summer and by storm
 water in the winter.





232-32. California.

Arroyo Grande Project - Wagon buried during winter season where total rainfall probably about 20 inches per year - Marine soils, Mainly Arnold LS and SL., susceptible to extreme washing where intensively cultivated - note land terraced in background by Soil Erosion Service to prevent such washing - This represents first attempt to conservation in the area.



232-36. California.
EROSION - Gully.

Arroyo Grande Project - Gully and wash on pasture on Arnold L S -
Gully extends to cultivated land above - probably pasture once cul-
tivated. January 27, 1935.



232-62. California.
DESERT LANDSCAPE.

10 Miles west of Yuma, Arizona. Desert pavement of rounded manganese encrusted, small polished gravel.
Mr. E. J. Carpenter has uncovered underlying sand showing but shallow layer of gravel.



Cal-2913. California.
EROSION CONTROL.

Recently completed pipe and wire revetment control ditch which empties into Corralitos Creek. A close inspection will reveal a new row of tree holes made possible by this control. At upper end of ditch Ben Ceschi is planting all of the newly made available area along banks, a strengthening control and at the same time raising artichokes. Operation was perfect during recent rains. The owner furnished one hundred dollars for cement and is an enthusiastic booster of SCS activities. Previously this was an open gully.



16529 - California.
DEFORESTATION.

Redwood Region, California. After removal crops requiring bare soil cultivation expose these slopes to excessive erosion. The farmer has devised individual terraces for trees and vines, an effort both costly and futile to hold the soil. A. E. Wieslander, Calif. Experiment Station - 1929. U.S.F.S. Agriculture in the Santa Cruz.

(Colored)
Slide B-43^a



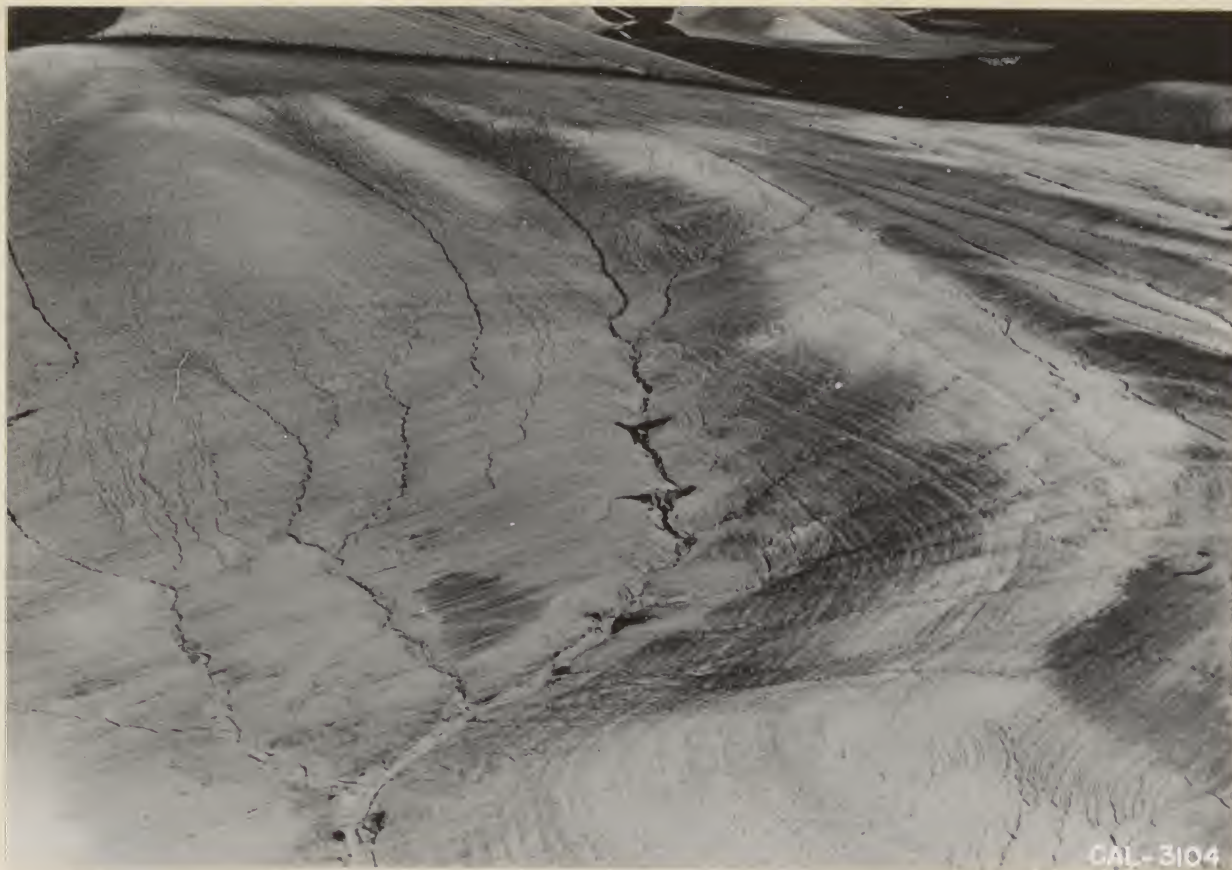
Cal-3100 - California.
Erosion Control - Dams.

The first two sections of this dam were built by the growers in 1927 and 1930. The third and last sections were built co-operatively by the growers and the SCS bringing the total height to 56 feet. March 20, 1936.



Cal-3102 - California.
Erosion - Gully.

Aerial view of badly gullied area with pronounced fingering
in all directions. March 20, 1936.



Cal-3104 - California
Erosion - Gully.

A portion of the many acres of badly eroded bean fields of the Las Posas area. Note the bean straw dams which in no way halted the progress of the gullies converging in the foreground. March 20, 1936.



Cal-3105 - California.
EROSION - Gully.

Looking N over corner of La Vista and L. A. Ave. which may be seen to the right of the deep gully, portions of which are partially stabilized by vegetation. An excellent example of fingering. March 20, 1936.



Cal-3107 - California.
Erosion - Gully.

A section of the Las Posas area not under SCS control where
bean straw dams were constructed in an effort to prevent the
formation of gullies such as shown.



Cal-3109 - California.
EROSION CONTROL - Terraces.

Narrow-base terraces constructed by the SCS. The whole field except that part shown in the lower right corner was subsoiled and came through a heavy rain with very little soil loss. The light colored portion on which rilling is plainly seen was used. This strikingly illustrates the effectiveness of subsoiling.



Cal-3110 - California
Terraces

Control structures have been built in the foreground
by the ECW. Narrow-base terraces may be seen in the
center of the area shown.



Cal-3159 - California.
Erosion - Gully.

An advanced stage of gullying in a gravel sand zone. The gully is approaching a stabilized grade, and vegetation is gaining a hold in the bottom. March 13, 1936.



Cal-3174 - California.
EROSION CONTROL - Check Dam.

Silting behind rock masonry check dam. Probable that lip and crest will be raised. Gully was widening and deepening rapidly previous to 6' of silt deposit shown.



Cal-3196. Solano county. March 19, 1936. Farmer plowing under the natural cover crop typical of the English Hills area. Note the slope of about 50%.

(Colored)
Slide C-94



Cal-3474. California.
EROSION CONTROL - Listing.

Improvements on this basin-lister were developed by the Corralitos Project to fill a need for an inexpensive method of controlling surface run-off. Note the dams at 4 foot intervals instead of the usual 10 or 12 feet. 10/20/36.

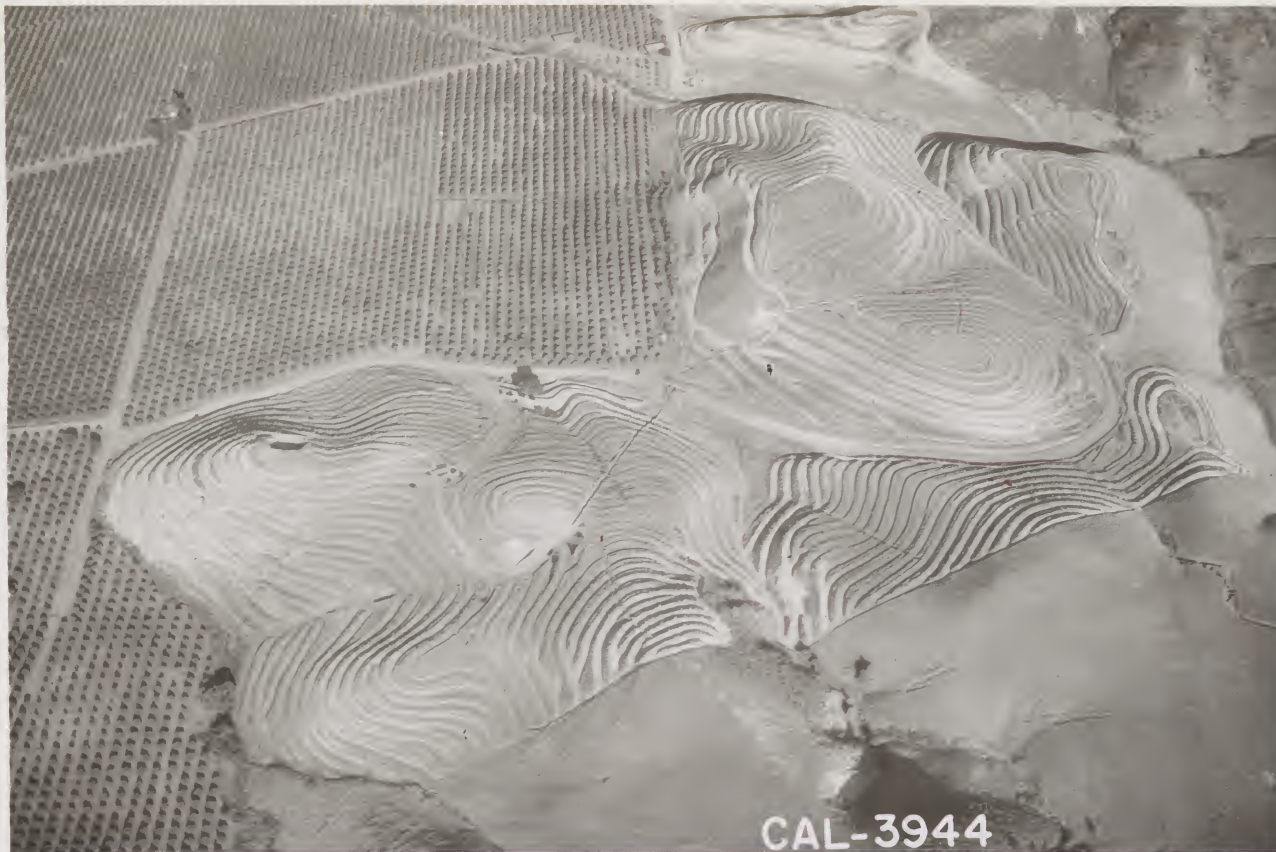
(Colored)
Slide C-38^u



Cal-3538. California.
EROSION CONTROL - Terraces.

Broad-base terraces have been constructed and a loose rock lined terrace outlet is now complete.

(Colored slide)
Slide E-34^c



Cal. 3944 -- June 1, 1937 -- Frank Buttram, Los Angeles County,
4 miles South of Puente, California

It has long been the practice to bench terrace the hills of this area
prior to planting citrus orchards. See photo number Cal-3858-59-60 for
a closer view of these terraces and a description of construction.
Purpose of photo: Record.

PHOTO BY: W. B. Radford

Slide 321^c



Cal-4112

Mendocino Co.

12-20-37

This pear orchard has been planted to a winter cover crop of vetch and barley to demonstrate the effectiveness of this control on hillside orchards.

Slide #45



Cal-4135 Santa Cruz Co. 1-19-38
A vegetated lined ditch with pipe and wire
check dams just after a storm. Operation was
perfect though runoff was heavy, as shown by
the line of debris.



Cal-4158 Solano Co. 2-2-38
Basin-listing after two days of rain. Note that in
the low spots the basins are full, while in the
better drained areas no large amount of water is
standing in the basins. Soil is deep with moderately
heavy subsoil. Volunteer cover consists of filaree
and bur clover.



Cal-4137 Santa Cruz County 1-19-38
An approximate retake of Cal-4023 showing the
channel in operation just after a storm.



Cal-4185 Ventura Co. 2-21-38
Aerial view of contour pasture ridges which
were very carefully constructed before the
winter rains set in. A heavy cover provides
additional protection. No breaks could be
found in any of the ridges on closer inspection.
This work was done by the land owner whose
property is not under agreement.

**Cal-4161**

Our cup runneth over. Water, "the lifeblood of the state," is in abundance, even in excess, in California, both in snow storage in the mountains and rain in the valleys. There has been considerable storm damage, but it has brought the entire state one of the greatest accretions of water in many years. A warm winter has produced lots of feed, and the State's face is bright and well washed. The picture shows how conservation can prevent erosion and add to the storage of soil moisture. The basins, made by a clever machine, catch the water instead of letting it race off to the ocean. As such practices expand, we will have less flood tragedy, and fewer drouth years.



Cal-4182

Santa Clara County

1-22-38

The walls of this deserted farm bunkhouse are lined with papers dated September, 1922. Apparently the destruction of this hillside orchard has taken place in a few short years.



Cal-4183

Solano Co.

1-26-38

Basin-listing with heavy cover of volunteer clover, alfilaria, wild oats. These basins have gone through two heavy storms without any failure. The slope averages 6%. The soil is deep with a moderately heavy subsoil. Cooperators are greatly pleased with this type of control.



Cal-4224 Ventura Co. 2-11-38
Water standing in basin-listed furrows, also
emergency annual contour ridges.



Cal-4243

Orange Co.

3-8-38

Clean tilled, irrigated land which has been cross checked to conserve rainfall. These checks have just withstood an eight-inch rain, holding all water and allowing it to settle into the ground. Oats and Melilotus have been planted as a cover crop and will be turned under for a green manure.

Slide #52



Cal-4312

Santa Cruz Co.

3-29-38

A striking example of a barley cover crop on a 20% slope. This cover was planted during November of 1937 and has reached an average height of $3\frac{1}{2}$ feet. The farmer is starting to disc under the cover crop.



Cal-4318

Santa Cruz Co.

3-29-38

Close-up of rye that has just been disced into the soil. This cover is being disced under as green manure, and will greatly improve the tilth.



Cal-4321

Sonoma Co.

3-31-38

Mr. Hagg is beginning to plow under his barley and purple vetch cover crop. The barley was drilled 50 lbs. to the acre and the purple vetch 30 lbs. Barnyard manure was applied at the rate of 4 tons to the acre. The cover was used not only to protect the slopes from eroding but also when it is plowed under as green manure it will greatly improve the tilth.



Cal-4339

Mendocino Co.

4-1-38

Cross-slope plowing and pure stand of Bur Clover strip in vine row. One of few vineyards with such growth of volunteer clover. Effective check of erosion on a 30% slope. Vegetative strip also valuable for quail food and cover.



Cal-4344

Mendocino Co.

4-1-38

Luxuriant growth of Bur clover in pear orchard on gentle slope. The farmer has applied barnyard manure regularly over a number of years.



Cal-4354 El Dorado Co. 2-11-38
A retake of photo number Cal-4353
after the installation of brush dams
in a gully which was originally
caused by run-off from a road above.



CAL-4359

Cal-4359

El Dorado Co.

3-30-38

A control system combining contour basin-listing and permanent grade ditches.

Where the surface was irregular, some of the basins did not hold. Water from these was carried off by the grade ditches.

This area will later be strip cropped between these ditches.



Cal-4541

Ventura Co.

6-10-38

View of upper portion of Nigger Canyon watershed looking north from a point on the west side of the canyon opposite the upper burned area. It is estimated that the major portion of the debris and silt deposition on the overwashed areas below has resulted from run-off transposition from the slips shown. An estimated 160,000 cubic yards of silt and debris was deposited over an area of approximately 90 acres of valuable agricultural land, about half of which was in full bearing citrus orchards during the 1937-38 storm periods.



Cal-5263

Flooded Farm, Sebastopol



Cal-5313

San Bernardino County

Heavy rock and debris deposited in citrus orchard near Los Angeles as a result of a storm in precipitation on watershed denuded by fire. Floods of this type frequently occur even though watersheds are quite small, sometimes containing less than 5 square miles when the vegetation is burned from steep slopes in Southern California.



Cal-5314

Ventura County

A modern citrus planting in Southern California with carefully engineered field outlay including irrigation system, roads, and contours. Natural seeding of Lupin used for cover crop had changed this field into a sea of blue at the time the picture was made. Light disking had been performed next to the trees in order to facilitate the plowing of irrigation furrows. The trees are about $2\frac{1}{2}$ years old.





C-6250

12-14-37

Typical overgrazed range land in California.

C-6599 *Calif.* Harper Property Photo No. 5
Shows water impounding percolation basin created by construction of earth fill dam and concrete-lined spillway. The water stored in underground supply is pumped from well below for irrigation purposes on this property. It is anticipated also that supply for windmill shown in left of picture will be augmented by rising water table.

C-6599 *Calif.* Anthony Property Photo No. 4
Shows 2 water impounding percolation basins created by construction of earth fill dams with concrete spillways, across wide swale. Bottoms of these basins are composed of pervious gravelly soil which allows rapid percolation of impounded run-off water into natural underground storage basins. The owner of this property has checked water level in well from which he pumps irrigation water, finds there is rapid increase in height of standing water in well after basins are filled and that pumping lift has been decreased sufficiently to allow him savings in pumping costs that greatly exceed the annual cost of the Water Facilities development. Silt deposition in these basins is removed when necessary. However, the condition of the watershed is such that this is a minor problem. Fallbrook Water Facilities Area.



C-6600 Elmer N. Kane Property
Shows water impounding percolation basin
formed by construction of an earth fill dam
with a drop inlet concrete pipe spillway,
and adjoining land which is a portion of
about 6 acres recently planted to citrus and
avocados to be irrigated from the water
developed by this basin and natural under-
ground supply. The irrigation water is pumped
through an underground steel pipe system and
applied by means of a portable irrigation
system. The water facility also includes the
digging of a well and installation of a pump
and motor. Santa Ana.



C-6600
Cal-4936 San Diego County 4-19-39
A stock watering pond and reservoir to raise
the water table, resulting from the construction
of an earthdike and concrete dam. Mr. Anthony,
cooperator, Fallbrook, California.



C-6690

California February, 1938
The slipping of recently cultivated
loose soil from steep slopes ranging
up to 35 to 40 per cent during heavy
rains. Los Posas Project.





Copy of K10-1161

C-9936 - 1941

Land slip near Vacaville, Calif. Soil--loam to heavy clay loam surface soil from one to three feet deep, overlying compacted heavy clay loam subsoil varying from one-half to two feet in thickness. The substratum consists of loose decomposed shale which apparently tends to settle or shift when saturated, resulting in mass movement of the soil above. Use--Range. Grasses: All annuals--Bur clover, Soft chess, Annual Fescue, Wild Oats. Field is overgrazed at present and has apparently been overgrazed over a period of years.

Slide # 278^c



WL-5894. California.
EROSION - Gully.

View of the Tehachapi Pass in southern California, following a single rain.

(Colored)
Slide 8-4



281389

October, 1932

Gullies, millions of them, on over-grazed privately owned sheep range near Monolith, California. This area has been completely denuded of all vegetation. Photo by F. G. Renner.



281390

October, 1932

A close-up of one of the hundreds of denuded and gullied slopes on privately-owned sheep range near Monolith, California. Photo by F. G. Renner.



287736

January, 1936

Part of a vast area of privately owned range near Bakersfield, California, where the range has been brought to a critical condition by too heavy livestock use. With the destruction of the plant cover, heavy ground squirrel infestations are now the cause of further gully erosion. Photo by F. G. Renner.



300983

November, 1933

The last stage in range deterioration caused by criminal over-use by livestock. Protective plant cover destroyed, top soil gone. Depth of gullies indicated by figure of man in lower right foreground. Near Tracy, California. Photo by F. G. Renner.



300987

November, 1933

Over-grazed and heavily trailed sheep range in the San Joaquin Valley, California. Such highly erodible soils require extreme care in their management. Photo by F. G. Renner.